



ENAV19-11.1



The Secretary-General

V
Would you please copy to:
- Dier, Mike
- Leg, Stefan
- Sarcin, Wim
Thank you
Mike
2016-04-22

Geneva, 4 April 2016

Mr. Francis Zachariae
Secretary-General
International Association of Marine Aids to
Navigation and Lighthouse Authorities (IALA)
10, rue des Gaudines
78100 ST. GERMAIN EN LAYE
France

Dear Sir,

The World Radiocommunication Conference, Geneva, 2015 (WRC-15) adopted or revised a number of Resolutions which it considered to be of interest to your organization and has instructed me to bring these Resolutions to your attention.

In pursuance of the above instruction, I have the honor to forward herewith, for information and appropriate action, copies of the said Resolutions. The same documents in the six official languages of the ITU are also available for download at <http://www.itu.int/go/wrc-15/res>.

It would be greatly appreciated if you would keep me informed of your organization's action on any of these matters, so that I may advise the ITU administrations accordingly.

Yours faithfully,

Houlin Zhao

Annexes: Resolution **359 (Rev. WRC-15)**
Resolution **360 (Rev. WRC-15)**
Resolution **361 (WRC-15)**
Resolution **362 (WRC-15)**

Resolution **809 (WRC-15)**
Resolution **810 (WRC-15)**

MOD

RESOLUTION 359 (REV.WRC-15)

**Consideration of regulatory provisions for updating and modernization of
the Global Maritime Distress and Safety System**

The World Radiocommunication Conference (Geneva, 2015),

considering

- a) that there is a continuing need in the Global Maritime Distress and Safety System (GMDSS), on a global basis, for improved communications to enhance maritime capabilities;
- b) that the International Maritime Organization (IMO) is considering GMDSS modernization;
- c) that advanced maritime MF/HF/VHF data systems and satellite communication systems may be used to deliver Maritime Safety Information (MSI) and other GMDSS communications;
- d) that IMO is considering recognition of additional global and regional GMDSS satellite communication systems;
- e) that GMDSS satellite systems need to provide protection of incumbent services in accordance with the Radio Regulations, including those in adjacent frequency bands, from harmful interference, and such GMDSS satellite systems should operate within the interference environment of existing systems,

noting

- a) that WRC-12 reviewed Appendix 17 to improve efficiency and introduce bands for new digital technology;
- b) that WRC-12 reviewed the regulatory provisions and spectrum allocations for use by maritime safety systems for ships and ports,

further noting

that WRC-12 and this conference have reviewed Appendix 18 to improve efficiency and introduce bands for new digital technology,

recognizing

- a) that advanced maritime communication systems may support the implementation of GMDSS modernization;
- b) that IMO efforts to implement GMDSS modernization may require modification of the Radio Regulations to accommodate advanced maritime communication systems;
- c) that due to the importance of GMDSS communication systems in ensuring the safe operation of shipping and commerce and security at sea, they must be resilient to interference;

- d) that IMO has received an application to recognize an existing satellite system as part of the GMDSS, and consequential regulatory actions may need to be considered;
- e) that Nos. 4.6, 5.369 and 5.372 provide information on the use of the frequency band 1 616-1 626.5 MHz, or parts thereof,

resolves to invite ITU-R

- 1 to conduct studies, taking into consideration the activities of IMO, as well as information and requirements provided by IMO, in order to determine the regulatory provisions to support GMDSS modernization;
- 2 to conduct studies, taking into consideration the activities of IMO and the recognition of additional satellite systems for use in the GMDSS, including consideration of the mobile-satellite service (MSS) allocations used and the potential impact of possible modifications to the provisions of the Radio Regulations on sharing and compatibility with other services and systems in the frequency band and adjacent frequency bands,

invites the 2019 World Radiocommunication Conference

- 1 to consider the result of ITU Radiocommunication Sector (ITU-R) studies and take necessary actions, as appropriate, to support GMDSS modernization;
- 2 to consider regulatory provisions, if appropriate, based on the ITU-R studies, and taking into consideration the activities of IMO, related to the introduction of additional satellite systems into the GMDSS, including consideration of the MSS allocations used, while ensuring the protection of all incumbent services, including those in adjacent frequency bands, from harmful interference, as stated in *recognizing e)*,

invites

- 1 IMO to actively participate in the studies by providing requirements and information that should be taken into account in ITU-R studies;
- 2 the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Electrotechnical Commission (IEC), the International Hydrographic Organization (IHO), the International Organization for Standardization (ISO) and the World Meteorological Organization (WMO) to contribute to these studies,

instructs the Secretary-General

to bring this Resolution to the attention of IMO and other international and regional organizations concerned.

MOD

RESOLUTION 360 (REV.WRC-15)

Consideration of regulatory provisions and spectrum allocations to the maritime mobile-satellite service to enable the satellite component of the VHF Data Exchange System and enhanced maritime radiocommunication

The World Radiocommunication Conference (Geneva, 2015),

considering

- a)* that the ITU Radiocommunication Sector (ITU-R) has developed the technical characteristics of a VHF Data Exchange System (VDES) as described in Recommendation ITU-R M.2092;
- b)* that the Automatic Identification System (AIS) as described in Recommendation ITU-R M.1371 is an integral part of the VDES;
- c)* that VDES uses the timing and frame structure of AIS;
- d)* that AIS is used primarily for surveillance and safety of navigation purposes in ship-to-ship use, ship reporting and vessel traffic services applications;
- e)* that there is a growing need for the establishment of a future VDES satellite component which would offer potential enhancements to maritime safety;
- f)* that the VDES satellite component should not interfere with AIS, application specific messages (ASM) and the VDES terrestrial component, while making efficient use of the VHF maritime spectrum and accommodating all users;
- g)* that the VDES satellite component should not cause harmful interference to digital selective calling (DSC), AIS, voice distress, safety and calling channels;
- h)* that the VDES satellite component may operate in the relevant part of the VHF maritime frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz,

noting

that the International Maritime Organization (IMO) has developed an international code for ships operating in polar waters ("Polar Code"),

recognizing

- a)* that a satellite component for VDES is necessary to expand the system from the coastal area to a global coverage;
- b)* that a satellite component of the VDES offers potential enhancement to VHF safety communication on a global basis to satisfy the increasing need for maritime communication for enhanced maritime safety;
- c)* that this satellite component should be capable of operating with the terrestrial VDES (AIS, ASM and VDE) and should not interfere with it, or block it;

- d) that the satellite component should not cause harmful interference to incumbent services and those in adjacent frequency bands, which are defined for the lower adjacent frequency band from 154 MHz to 156 MHz and for the higher adjacent frequency band from 162 to 164 MHz, and to all other components of the existing VDES as described in Recommendation ITU-R M.2092, DSC, AIS and voice distress, safety and calling channels;
- e) that the receiver on the satellite should be resilient to harmful interference from incumbent services and those services in adjacent bands, which are defined for the lower adjacent frequency band from 154 MHz to 156 MHz and for the higher adjacent frequency band from 162 MHz to 164 MHz;
- f) that since the VDES as described in Recommendation ITU-R M.2092 uses the frequency bands of Appendix 18, the implementation of the VDES satellite component would be more effective when using the frequency bands within Appendix 18;
- g) that studies should be carried out to identify spectrum needed for the VDES satellite component;
- h) that some administrations have initiated testing of the satellite component for VDES which will continue,

resolves to invite the 2019 World Radiocommunication Conference

to consider, based on the results of ITU-R studies, modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (MMSS) (Earth-to-space and space-to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix 18, to enable a new VDES satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, ASM and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands as stated in *recognizing d) and e)*,

invites ITU-R

to conduct, as a matter of urgency, and in time for WRC-19, sharing and compatibility studies between VDES satellite components and incumbent services in the same and adjacent frequency bands specified in *recognizing d) and e)* to determine potential regulatory actions, including spectrum allocations to the MMSS (Earth-to-space and space-to-Earth) for VDES applications,

further invites

all members of ITU-R, IMO, the World Meteorological Organization (WMO), the International Hydrographic Organization (IHO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Electrotechnical Commission (IEC) and the International Radio Maritime Committee (CIRM) to contribute to these studies,

invites administrations

to participate in, and support, field trials of the VDES satellite component,

instructs the Secretary-General

to bring this Resolution to the attention of IMO, WMO, IHO, IEC, IALA, CIRM and other international and regional organizations concerned.

ADD

RESOLUTION 361 (WRC-15)

**Consideration of regulatory provisions for modernization of the
Global Maritime Distress and Safety System and
related to the implementation of e-navigation**

The World Radiocommunication Conference (Geneva, 2015),

considering

- a)* that there is a continuing need in the Global Maritime Distress and Safety System (GMDSS), on a global basis, for improved communications to enhance maritime capabilities;
- b)* that the International Maritime Organization (IMO) is considering GMDSS modernization;
- c)* that advanced maritime MF/HF/VHF data systems and satellite communication systems may be used to deliver Maritime Safety Information (MSI) and other GMDSS communications;
- d)* that IMO is considering additional global and regional GMDSS satellite service providers;
- e)* that WRC-19 will have commenced regulatory actions in regard to modernization of the GMDSS;
- f)* that IMO is in the process of implementing e-navigation, defined as the harmonized collection, integration, exchange, presentation and analysis of marine information on board and ashore by electronic means to enhance berth-to-berth navigation and related services for safety and security at sea and protection of the marine environment;
- g)* that GMDSS modernization may be influenced by the development of e-navigation,

noting

- a)* that WRC-12 reviewed Appendix 17 and Appendix 18 to improve efficiency and introduce frequency bands for new digital technology;
- b)* that WRC-12 has reviewed the regulatory provisions and spectrum allocations for use by maritime safety systems for ships and ports,

further noting

that WRC-12 and this conference have reviewed Appendix 18 to improve efficiency and introduce frequency bands for new digital technology,

recognizing

- a) that advanced maritime communication systems may support the implementation of GMDSS modernization and e-navigation;
- b) that IMO efforts to implement GMDSS modernization and e-navigation may require a review of the Radio Regulations to accommodate advanced maritime communication systems;
- c) that, due to the importance of these radio links in ensuring the safe operation of shipping and commerce and security at sea, they must be resilient to interference,

resolves to invite the 2023 World Radiocommunication Conference

- 1 to take into consideration the activities of IMO, as well as information and requirements provided by IMO, in order to determine the regulatory actions to support GMDSS modernization;
- 2 to consider possible regulatory actions, including spectrum allocations based on the ITU Radiocommunication Sector (ITU-R) studies, for the maritime mobile service, supporting e-navigation,

invites ITU-R

to conduct studies taking into consideration the activities of IMO, in order to determine spectrum needs and regulatory actions to support GMDSS modernization and the implementation of e-navigation,

invites

- 1 IMO to actively participate in the studies by providing requirements and information that should be taken into account in ITU-R studies;
- 2 the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Civil Aviation Organization (ICAO), the International Electrotechnical Commission (IEC), the International Hydrographic Organization (IHO), the International Organization for Standardization (ISO) and the World Meteorological Organization (WMO) to contribute to these studies,

instructs the Secretary-General

to bring this Resolution to the attention of IMO and other international and regional organizations concerned.

ADD

RESOLUTION 362 (WRC-15)

**Autonomous maritime radio devices operating in
the frequency band 156-162.05 MHz**

The World Radiocommunication Conference (Geneva, 2015),

considering

- a) that, in order to enhance safety of navigation, there is a need to identify and categorize maritime radio devices which operate autonomously in the maritime environment, including but not limited to: devices on towed unpowered ships and barges, derelict ships, floating ice and wave-gliders, “man overboard” devices, diver locating, alerting and radiotelephony devices, fishing net marker buoys, oil spill tracking buoys, oceanographic and other drifting buoys;
- b) that such autonomous maritime radio devices are operating with automatic identification system (AIS) technology or digital selective calling (DSC) technology, or transmitting synthetic voice messages, or with a combination of those technologies, and have been developed for safety-related purposes, and their number is expected to increase;
- c) that AIS is a proven technology for maritime safety applications, providing identification functions, safety of navigation functions, aids to navigation, locating signals and data communications;
- d) that some of these autonomous maritime radio devices may need different maritime identifiers from those used for personal or shipborne equipment,

recognizing

- a) that the integrity of AIS and the Global Maritime Distress and Safety System (GMDSS) should be protected;
- b) that ships complying with the International Convention for the Safety of Life at Sea (SOLAS) 1974 (as amended) and other ships equipped with automated radiocommunication systems, including AIS, DSC and/or other GMDSS alerting devices should be assigned maritime mobile service identities (MMSIs) in accordance with Recommendation ITU-R M.585;
- c) that the usage of frequencies of Appendix 18 to the Radio Regulations and maritime identities described in Recommendation ITU-R M.585 should be limited to devices which are identified as part of the maritime mobile service;
- d) that these autonomous maritime radio devices, which do not fall under the definition of No. 1.28 and the ITU Radiocommunication Sector (ITU-R) Recommendations, require a new categorization,

further recognizing

- a) that the majority of autonomous maritime radio devices using AIS technology are operating in AIS 1 and AIS 2 frequency bands, and, to some extent, occupying the resources of MMSIs for ship stations or aids to navigation;
- b) that Recommendations ITU-R M.493, ITU-R M.1371 and ITU-R M.541 describe technical and operational characteristics for some relevant maritime radio devices;
- c) that Report ITU-R M.2285 provides an overview of systems and their mode of operation for some maritime devices used as maritime survivor locating systems and devices (man overboard systems);
- d) that an evaluation of the effects on the functioning of AIS used for the safety of navigation, and especially search and rescue activities implemented by AIS-search and rescue transmitters (AIS-SARTs), is required,

noting

- a) that WRC-12 designated channels in Appendix 18 of the Radio Regulations for experiments and testing for the future new AIS applications or systems;
- b) that ITU-R has been requested to study a future new maritime identification scheme,

resolves to invite the 2019 World Radiocommunication Conference

to consider the results of ITU-R studies and take appropriate actions,

invites ITU-R

- 1 to conduct the necessary studies in time for WRC-19 to determine the spectrum needs and technical and operational characteristics of autonomous maritime radio devices operating in the frequency band 156-162.05 MHz;
- 2 to conduct the necessary studies to categorize the various autonomous maritime radio devices;
- 3 to conduct sharing and compatibility studies, based on the results of *invites ITU-R* 1 and 2, to ensure that no undue constraints are placed on the GMDSS and AIS;
- 4 to conduct studies, taking into account the results of *invites ITU-R* 1 to 3, and existing maritime technology, to determine potential regulatory actions and appropriate frequencies for autonomous maritime radio devices within the frequency band 156-162.05 MHz,

further invites

the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO), the World Meteorological Organization (WMO), the International Hydrographic Organization (IHO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Electrotechnical Commission (IEC) and the International Radio Maritime Committee (CIRM) to contribute to these studies,

instructs the Secretary-General

to bring this Resolution to the attention of IMO, ICAO, WMO, IEC, IALA, IHO, CIRM and other international and regional organizations concerned.

ADD

RESOLUTION 809 (WRC-15)

Agenda for the 2019 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2015),

considering

- a) that, in accordance with No. 118 of the ITU Convention, the general scope of the agenda for a world radiocommunication conference should be established four to six years in advance and that a final agenda shall be established by the ITU Council two years before the conference;
- b) Article 13 of the ITU Constitution relating to the competence and scheduling of world radiocommunication conferences and Article 7 of the Convention relating to their agendas;
- c) the relevant resolutions and recommendations of previous world administrative radio conferences (WARCs) and world radiocommunication conferences (WRCs),

recognizing

- a) that this conference has identified a number of urgent issues requiring further examination by WRC-19;
- b) that, in preparing this agenda, some items proposed by administrations could not be included and have had to be deferred to future conference agendas,

resolves

to recommend to the Council that a world radiocommunication conference be held in 2019 for a maximum period of four weeks, with the following agenda:

- 1 on the basis of proposals from administrations, taking account of the results of WRC-15 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the frequency bands under consideration, to consider and take appropriate action in respect of the following items:
 - 1.1 to consider an allocation of the frequency band 50-54 MHz to the amateur service in Region 1, in accordance with Resolution **658 (WRC-15)**;
 - 1.2 to consider in-band power limits for earth stations operating in the mobile-satellite service, meteorological-satellite service and Earth exploration-satellite service in the frequency bands 401-403 MHz and 399.9-400.05 MHz, in accordance with Resolution **765 (WRC-15)**;
 - 1.3 to consider possible upgrading of the secondary allocation to the meteorological-satellite service (space-to-Earth) to primary status and a possible primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz, in accordance with Resolution **766 (WRC-15)**;

- 1.4 to consider the results of studies in accordance with Resolution **557 (WRC-15)**, and review, and revise if necessary, the limitations mentioned in Annex 7 to Appendix **30 (Rev.WRC-15)**, while ensuring the protection of, and without imposing additional constraints on, assignments in the Plan and the List and the future development of the broadcasting-satellite service within the Plan, and existing and planned fixed-satellite service networks;
- 1.5 to consider the use of the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) by earth stations in motion communicating with geostationary space stations in the fixed-satellite service and take appropriate action, in accordance with Resolution **158 (WRC-15)**;
- 1.6 to consider the development of a regulatory framework for non-GSO FSS satellite systems that may operate in the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space), in accordance with Resolution **159 (WRC-15)**;
- 1.7 to study the spectrum needs for telemetry, tracking and command in the space operation service for non-GSO satellites with short duration missions, to assess the suitability of existing allocations to the space operation service and, if necessary, to consider new allocations, in accordance with Resolution **659 (WRC-15)**;
- 1.8 to consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution **359 (Rev.WRC-15)**;
- 1.9 to consider, based on the results of ITU-R studies:
 - 1.9.1 regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices to protect the GMDSS and automatic identifications system (AIS), in accordance with Resolution **362 (WRC-15)**;
 - 1.9.2 modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (Earth-to-space and space-to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix **18**, to enable a new VHF data exchange system (VDES) satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, applications specific messages (ASM) and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands as stated in *recognizing d) and e)* of Resolution **360 (Rev.WRC-15)**;
- 1.10 to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution **426 (WRC-15)**;
- 1.11 to take necessary actions, as appropriate, to facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations, in accordance with Resolution **236 (WRC-15)**;
- 1.12 to consider possible global or regional harmonized frequency bands, to the maximum extent possible, for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile-service allocations, in accordance with Resolution **237 (WRC-15)**;

- 1.13 to consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **238 (WRC-15)**;
- 1.14 to consider, on the basis of ITU-R studies in accordance with Resolution **160 (WRC-15)**, appropriate regulatory actions for high-altitude platform stations (HAPS), within existing fixed-service allocations;
- 1.15 to consider identification of frequency bands for use by administrations for the land-mobile and fixed services applications operating in the frequency range 275-450 GHz, in accordance with Resolution **767 (WRC-15)**;
- 1.16 to consider issues related to wireless access systems, including radio local area networks (WAS/RLAN), in the frequency bands between 5 150 MHz and 5 925 MHz, and take the appropriate regulatory actions, including additional spectrum allocations to the mobile service, in accordance with Resolution **239 (WRC-15)**;
- 2 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution **28 (Rev.WRC-15)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in Annex 1 to Resolution **27 (Rev.WRC-12)**;
- 3 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the conference;
- 4 in accordance with Resolution **95 (Rev.WRC-07)**, to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;
- 5 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention;
- 6 to identify those items requiring urgent action by the radiocommunication study groups in preparation for the next world radiocommunication conference;
- 7 to consider possible changes, and other options, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, an advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC-07)**, in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;
- 8 to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account Resolution **26 (Rev.WRC-07)**;

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

9.1 on the activities of the Radiocommunication Sector since WRC-15;

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations*; and

9.3 on action in response to Resolution 80 (Rev.WRC-07);

10 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention,

resolves further

to activate the Conference Preparatory Meeting,

invites the Council

to finalize the agenda and arrange for the convening of WRC-19, and to initiate as soon as possible the necessary consultations with Member States,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and to prepare a report to WRC-19,

instructs the Secretary-General

to communicate this Resolution to international and regional organizations concerned.

* This agenda item is strictly limited to the Report of the Director on any difficulties or inconsistencies encountered in the application of the Radio Regulations and the comments from administrations.

ADD

RESOLUTION 810 (WRC-15)

Preliminary agenda for the 2023 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2015),

considering

- a)* that, in accordance with No. 118 of the ITU Convention, the general scope of the agenda for WRC-23 should be established four to six years in advance;
- b)* Article 13 of the ITU Constitution relating to the competence and scheduling of world radiocommunication conferences and Article 7 of the Convention relating to their agendas;
- c)* the relevant resolutions and recommendations of previous world administrative radio conferences (WARCs) and world radiocommunication conferences (WRCs),

resolves to give the view

that the following items should be included in the preliminary agenda for WRC-23:

- 1 to take appropriate action in respect of those urgent issues that were specifically requested by WRC-19;
- 2 on the basis of proposals from administrations and the Report of the Conference Preparatory Meeting, and taking account of the results of WRC-19, to consider and take appropriate action in respect of the following items:
 - 2.1 to consider possible spectrum needs and regulatory actions to support Global Maritime Distress and Safety System (GMDSS) modernization and the implementation of e-navigation, in accordance with Resolution **361 (WRC-15)**;
 - 2.2 to conduct, and complete in time for WRC-23, studies for a possible new allocation to the Earth exploration-satellite (active) service for spaceborne radar sounders within the range of frequencies around 45 MHz, taking into account the protection of incumbent services, in accordance with Resolution **656 (WRC-15)**;
 - 2.3 in accordance with Resolution **657 (WRC-15)**, to review the results of studies relating to the technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors, with a view to providing appropriate recognition and protection in the Radio Regulations without placing additional constraints on incumbent services;
 - 2.4 study of spectrum needs and possible new allocations to the fixed-satellite service in the frequency band 37.5-39.5 GHz (Earth-to-space), in accordance with Resolution **161 (WRC-15)**;
 - 2.5 to review the spectrum use and spectrum needs of existing services in the frequency band 470-960 MHz in Region 1 and consider possible regulatory actions in the frequency band 470-694 MHz in Region 1 on the basis of the review in accordance with Resolution **235 (WRC-15)**;

3 to examine the revised ITU Radiocommunication Sector (ITU-R) Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution **28 (Rev.WRC-15)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in Annex 1 to Resolution **27 (Rev.WRC-12)**;

4 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the conference;

5 in accordance with Resolution **95 (Rev.WRC-07)**, to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

6 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention;

7 to identify those items requiring urgent action by the radiocommunication study groups;

8 to consider possible changes, and other options, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, on advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC-07)**, in order to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;

9 to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account Resolution **26 (Rev.WRC-07)**;

10 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

10.1 on the activities of ITU-R since WRC-19;

10.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and

10.3 on action in response to Resolution **80 (Rev.WRC-07)**;

11 to recommend to the ITU Council items for inclusion in the agenda for the following WRC, in accordance with Article 7 of the Convention,

invites the Council

to consider the views given in this Resolution,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and to prepare a report to WRC-23,

instructs the Secretary-General

to communicate this Resolution to international and regional organizations concerned.